SELL, GIVE AWAY, OR DONATE: AN EXPLORATORY STUDY FASHION CLOTHING DISPOSAL BEHAVIOUR IN TWO COUNTRIES

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ABSTRACT

This study investigates the antecedents to clothing disposal methods in two countries: Scotland and Australia. Increasing volumes of textiles are disposed of in landfill sites to the detriment of the environment. Extant research has identified the influences affecting an increased rate of purchasing and the trend to keep clothing for an ever shorter time. As such, it is imperative to examine the factors that affect consumers' choice of clothing disposal method as limited research has been undertaken in this area of socially responsible consumption. The results of a survey administered to a sample of female consumers in the two countries identifies antecedents of three forms of clothing disposal methods: selling through eBay or second hand shops, giving away to family or friends or donating to charities. Findings show differences between the countries regarding clothing disposal behaviour. Nevertheless, general recycling behaviour was found to be the strongest predictor for donating to charities in both countries.

Keywords: clothing, fashion, disposal, Australia, Scotland

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INTRODUCTION

Sales of fashion clothing have increased steadily in the traditional and competitive fashion market of UK, with 21.4 per cent growth between 2000 to 2005, and is forecasted to expand a further 18.5 per cent between 2005 and 2010 (Verdict 2005). Price deflation has led to an increase in the amount of clothing sold within the fast-fashion sector, accounting for nearly one quarter of all UK clothing sales (Verdict 2008). Fast-fashion retailers such as H&M, Zara and Topshop are launching new lines every two to three weeks at very low prices, thus increasing sales through impulse purchasing. The fast-fashion industry is also thriving in the emerging fashion markets such as Australia, with exemplar brands such as Dotti and Valleygirl. Furthermore, it is forecasted that sales will receive a huge boost when Zara opens in Sydney in 2010 (Safe 2007).

Consumer engagement with and concern over environmental issues emerged during the 1970's, and gained acceptance during the 1980's and 90's (Anderson and Cunningham 1972; Sanne 2002; Doane 2001). This was brought about by the establishment of regular international conferences, which provided a forum for discussion (Jones et al. 2005; Kalafatis et al. 1999; Robins and Roberts 1997; Strong 1996). One of the specific themes to emerge from these conferences was that of sustainable consumption (Jackson 2004), which is defined as 'consumption that supports the ability of current and future generations to meet their material and other needs, without causing irreversible damage to the environment or loss of function in natural systems' (Jackson and Michaelis 2003, 14). Sustainable consumption, as an aspect of consumer behaviour, involves pre-purchase, purchase, and post-purchase components, with the latter including the process of discarding clothing (Jacoby, Berning, and Dietvorst 1977; Winakor 1969). However, the disposal component is a relatively new area of

research (de-Coverly, O'Malley, and Patterson 2003; Holbrook 1995) since most research on socially responsible consumer behaviour is centred on the purchase experience (Mohr, Webb, and Harris 2001). Essentially, this final component of consumer behaviour concerns whether clothing is re-used, recycled or simply discarded or destroyed. Burke and others (1978) profiled consumers, based on their disposal behaviour, and found that consumers who disposed of products with little reference to further use, potential use by others or environmental impact tended to be younger.

Disposal is an increasing problem in the UK where more than 100 million tonnes of waste from households and commerce (Defra 2007), of which one million tonnes is made up of textiles, end up in landfill sites every year (Waste-Online 2008). Textiles present particular problems in landfill since synthetic products are very slow to decompose, whilst woollen garments decompose and produce methane, which contributes to global warming (Waste-Online 2004). In emerging fashion markets such as Australia, the main method of textile disposal is landfill, and a significant amount of textile waste from manufacturers and consumers is sent to landfill every year at great cost to the industry and tax payers (Caulfield 2009). This represents approximately four per cent of the contents of landfills in Australia.

Consumers are also engaged in recycling or donating their used clothing as part of the clothing consumption process (Ha-Brookshire and Hodges 2009). In the UK, recycling firms purchase textiles collected by councils via home recycling boxes, acquire surplus stock from charity shops and manage textile recycling containers in supermarket car parks where donations are made to charities. They collect the contents of these large containers and, where agreed, pay the charities listed on the bins compensation based on weight. Similarly they collect donations from schools, who also receive payments based on weight. For example, in Scotland ‘Nathans Wastesavers’ collect more than 400 tonnes of material for recycling and re-use each week. The vast majority of textiles (85 per cent) received come from charity shops.

Hundreds of tonnes of clothing are exported to Africa, Asia, Eastern Europe and the Middle East each week, thus providing affordable, quality clothing to people living in the Third World. Of all the textiles received, 76 per cent are re-used, 22 per cent are recycled and only two per cent is wasted (Nathans Wastesavers 2008).

In Australia, the organised recovery of post-consumer textile waste (mainly used clothing) is predominantly undertaken by charities, in contrast to other developed countries, where there are more private textile waste collectors, merchants and traders (Caulfield 2009). This waste is, by means of community donations, deposited into charity bins, thousands of which are located across Australia, as well as drop-offs directly to charity shops. Once collected, the textiles are sorted and sent to those in need in the community, or sold through shops to generate capital to fund solutions to social problems (Caulfield 2009). However, it is estimated that 12.5 million kilos of textiles are unsuitable and are subsequently sent to landfill, which contaminates the environment.

Hence, the promotion of recycling has become increasingly important. Since previous research has found cultural differences in socially responsible behaviour (Maignan 2001), this study investigates how female consumers from two different countries deal with fashion textile disposal. More specifically, the study will analyse the drivers of consumers' clothing disposal behaviour in Scotland and Australia. These two countries were chosen because they have robust fashion industries. The findings of this study will help identify how consumer disposal behaviour might be changed to encourage recycling, giving away or donating to charities in order to reduce the amount of textiles in landfill sites.

CONCEPTUAL MODEL

Previous research has explored the re-use and recycling of paper, glass and plastic (e.g. Anderson and Brodin 2005; Fraj and Martinez 2006; Jahre 1995; Moczygemba and Smaka-Kincl 2007), but very few studies have examined the disposal of textiles (Birtwistle and

Moore 2006; Domina and Koch 1999; Ha-Brookshire and Hodges 2009; Morgan and Birtwistle 2009). This study extends earlier research on textile disposal behaviour by Birtwistle and Moore (2006) and Morgan and Birtwistle (2009). In particular, it aims to explore the antecedents of different forms of textile disposal behaviour. Previous research identifies several ways that consumers can dispose of their fashion garments. Among the most common clothing disposal behaviour mentioned by female consumers are donating to charity or charity bins, giving away to family or friends, selling through eBay or garage sales, or throwing way to rubbish bins (Birtwistle and Moore 2006; Domina and Koch 1999; Ha-Brookshire and Hodges 2009).

Morgan and Birtwistle (2009) explore the effect of fashion innovativeness, general recycling behaviour, awareness of the environment and attitude to textile reuse as antecedents of textile disposal behaviour. However, the authors do not distinguish between different forms of textile disposal behaviour such as donation, recycling or selling. This is important in order to understand the drivers of textile disposal methods that encourage some form of clothing recycling, and not ending up in landfill sites. Thus, the relationships are depicted in Figure 1 which presents the conceptual model. This model considers three forms of clothing disposal behaviour as dependent variables: economic disposal such as selling through eBay, giving away to family and friends and donating to charity. The model also includes three independent variables: fashion innovation, awareness of the environment and general recycling behaviour. The next section will discuss the hypotheses.

Insert Figure 1 here

Fashion Innovators

Innovators and early adopters are consumers with high fashion awareness, who are conscious of new trends and evaluate, adopt and dispose of clothing in a short period of time (Birtwistle and Moore 2006). For example, although UK fashion innovators only spent 18.5 per cent

more than average consumers, in cash terms, between 2002 and 2006, equivalent to £665 per person, this is one of the highest personal expenditures per person in Europe (Mintel 2007). The exceptional growth of fast-fashion retailers can be attributed to high impulse purchasing behaviour among consumers that are more fashion-hungry. The success of a new fashion product is related to its acceptance by fashion innovators at the early stage of the product life cycle (Goldsmith, Moore, and Beaudoin 1999).

Previous studies do not find a positive significant relationship between fashion innovation and donation of clothing (Morgan and Birtwistle 2009). However, this may be due to the fact that fashion innovators are more likely to dispose of their fashion garments by throwing them away in the rubbish bin, selling them through eBay or second hand stores, or giving them away to family and friends, rather than donating them to charity because these consumers are found to be less socially responsible when disposing of their clothing compared to food or money (Ha-Brookshire and Hodges 2009). Thus, the following hypotheses are stated:

> ***Hypothesis 1a:*** *Fashion innovation is positively related to 'economic' textile disposal behaviour.*
>
> ***Hypothesis 1b:*** *Fashion innovation is positively related to 'giving away' textile disposal behaviour.*

Consumer Awareness of the Environment

Since the 1970s, there has been increasing concern and public awareness regarding environmental issues (Anderson and Cunningham 1972). Ethical concerns raised by pressure groups and the establishment of regular international conferences have provided a forum for discussion. Consumer awareness of the environment therefore refers to consumer perceptions regarding the fragility of the environment and the notion that consumption can cause damage to the environment (Strong 1996).

As environmental issues have grown in importance, interest in recycling has also increased (Defra 2008). A previous study by Morgan and Birtwistle (2009) found a significant positive relationship between consumer awareness of the environment and sustainable textile disposal behaviour. This implies that consumers that are conscious about environmental issues are more likely to make an effort to dispose of their textile garments in a way that does not hurt the environment. However, awareness of the environment may not be significantly related to all three textile disposal behaviours. We propose that awareness of the environment is related to giving to family and friends and donating to charities, but not necessarily to economic behaviour such as selling in eBay or second hand shops since environmentally aware consumers may not want an economic outcome as a result of their disposal. Thus, the following hypotheses are stated:

Hypothesis 2a: *Awareness of the environment is positively related to 'giving away' textile disposal behaviour.*

Hypothesis 2b: *Awareness of the environment is positively related to 'donation to charity' textile disposal behaviour.*

General Recycling Behaviour

Several studies have researched consumer recycling with the goal of determining how to encourage consumer recycling behaviours (Biswas et al. 2000). Specifically for clothing, recycling behaviour is found to be positively related to fashion disposal methods such as donating to charities (Morgan and Birtwistle 2009). This means that consumers who usually recycle plastic, glass or paper are more likely to recycle their fashion garments. According to Ha-Brookshire and Hodges (2009), consumers 'feel better' after donating their used clothing. However, it is not clear if general recycling behaviour is related to all three forms of textile disposal behaviour. Thus, we propose the following hypotheses:

Hypothesis 3a: *General recycling behaviour is positively related to 'economic' textile*

disposal behaviour.

***Hypothesis 3b**: General recycling behaviour is positively related to 'giving away' textile disposal behaviour.*

***Hypothesis 3c:** General recycling behaviour is positively related to 'donation to charity' textile disposal behaviour.*

METHODOLOGY

Data for this study was collected through a survey instrument administered to female consumers in two countries, Scotland and Australia, to determine how consumers from different countries deal with the disposal of textiles. These countries were chosen because they are important fashion nations located in different continents, which allows for the identification of differences across countries in terms of textile disposal behaviour. In Scotland, a convenience sample of 600 street intercept interviews with females led to 504 usable questionnaires, a response rate of 84 per cent. In Australia, an online survey was sent to a convenience sample of 360 females located in Brisbane, which led to 239 usable questionnaires, with a 66 per cent response rate. The response profile is presented in Table 1.

Insert Table 1 here

The questionnaire included several sections concerning antecedents of textile disposal behaviour. Section one measured ***fashion innovation*** with a six-item scale adapted from Goldsmith and Hofacker (1991). Section two measured ***general recycling behaviour*****,** with a five-item scale adopted from Koch and Domina (1997). Section three measured ***consumer awareness of the environment***, with a seven-item scale, also adopted from Koch and Domina (1997). Section four measured the three types of textile disposal behaviour: ***economic textile disposal behaviour*** was measured by five questions adopted from Domina and Koch (1999), another three questions adopted from Domina and Koch (1999) measured textile disposal behaviour related to ***giving away to family members or friends***, and three

questions adopted from Jacoby et al. (1977) measured textile disposal behaviour related to social benefit such as ***donating to charity***. These measures used a five-item scale, where the number one indicated 'never' or 'strongly disagree' and the number five indicated 'very frequently' or 'strongly agree'. In section five, three open-ended questions asked respondents the following questions: 1) how do they usually dispose of their fashion clothing?, 2) why do they do it that way?, and 3) what would make them give all their clothing to charity shops or ensure they were given to organisations which would re-use or recycle textiles? The aim of this section was to explore additional insights related to textile donation behaviour that would complement the quantitative data. The final section contained questions on the profile of the respondents in terms of age, marital status, education, income and the occupation of the main provider.

DATA ANALYSIS

To analyse the data, descriptive statistics, factor analysis and multiple linear regression analysis were conducted through SPSS 16.0. Regression analysis is commonly used in fashion retailing studies (e.g. Lee and Kim 2008). For this study, each dependent variable was regressed with the independent variables considered in the model. Descriptive statistics, construct reliabilities, items, means and standard deviations are presented in Table 2.

Insert Table 2 here

The reliability and validity of the construct measures were measured using Cronbach's alpha reliability and Pearson correlations. All scales exhibited relatively high reliability coefficients with Cronbach alpha scores over 0.6 in both countries: fashion innovation scale (α=.691 in Scotland; α=.769 in Australia), consumer awareness of the environment scale (α=.640 in Scotland; α=.683 in Australia), general recycling behaviour scale (α=.915 in Scotland; α=.927 in Australia), economic textile disposal scale (α=.676 in Scotland; α=.657 in Australia), give away to family or friends scale (α=.741in Scotland; α=.776 in Australia), and

the donate to charity scale (α=.687 in Scotland; α=.726 in Australia). As seen in Tables 3a and 3b, the analyses reveals that no correlations between constructs exceeds the lowest alpha reliability score, confirming the discriminant validity of the constructs (Gaski 1984).

Insert Tables 3a and 3b here

To check and reduce the common method bias variance, the questionnaire included mixed positive and negatively worded items. Using Podsakoff and Organ's (1986) procedure, factor analysis was conducted for all constructs and this demonstrated that there was no single factor or any general factor that accounted for most of the variance in the independent and dependent variables. Thus, no common method bias variance issues were identified.

Descriptive Analysis

In terms of fashion innovativeness, a higher mean score was found for Scotland (mean=3.21, sd. 1.09), compared to Australia (mean=2.75, sd. 1.26). This implies that the sample from Scotland contained more fashion innovators compared to the sample from Australia. Further, in both Scotland and Australia, fashion innovators were more likely to be younger. Mean scores on the scale measuring awareness of the environment were higher for the Australian sample (mean= 3.68, sd. 1.18) than the Scottish sample (mean= 3.5, sd. 1.01), suggesting that the Australia sample is more environmentally conscious. Mean scores on general recycling behaviour were higher for the Australian sample (mean= 3.22, sd. 0.97) compared to the Scottish sample (mean= 3.08, sd. 1.31), indicating that Australian female consumers recycle more than Scottish female consumers. In regards to the dependent variables, the mean scores for economic textile disposal behaviour were almost identical in Scotland (mean= 1.57, sd. 0.85) and Australia (mean= 1.56, sd. 0.96). In terms of giving away to family and friends, the mean score was higher for the Australian sample (mean= 2.84, sd. 1.20) than the Scottish sample (mean=2.65, sd. 1.26). Finally, mean scores on the variable, 'donation to charity', were higher for the Australian sample (mean=3.46, sd. 1.05) compared to the Scottish sample

(mean= 3.00, sd. 1.22), signalling that Australian female consumers donate more to charity than Scottish female consumers.

Hypotheses Testing

Hypotheses were statistically tested using multiple regression analysis. The results of the regression analysis are presented in Table 4.

Insert Table 4 here

Hypothesis 1a predicted a positive relationship between fashion innovativeness and economic textile disposal behaviour. Table 4 shows that the relationship between fashion innovativeness and economic textile disposal behaviour is not significant in Australia (β= .142, t=1.691, p=.092) or Scotland (β= .010, t=.177, p=.860), therefore, **Hypothesis 1a is not supported in both countries.** In terms of Hypothesis 1b, a positive relationship between fashion innovativeness and disposal behaviour of giving to family and friends was proposed. The data shows that the relationship between fashion innovativeness and the disposal behaviour of giving to family and friends is significant in Australia (β= .236, t=2.845, p=.005), but not significant in Scotland (β= .027, t=.470, p=.638). Thus, **Hypothesis 1b is supported in Australia, but not in Scotland, so H1b is partially supported.**

Hypothesis 2a predicted a positive relationship between awareness of the environment and the disposal behaviour of giving to family and friends. Results shows that the relationship between awareness of the environment and the disposal behaviour of giving to family and friends is supported in Australia (β= .203, t=3.002, p=.003), but not supported in Scotland (β= .048, t=.986, p=.324). Thus, **Hypothesis 2a is supported for Australia, but not for Scotland, so H2a is partially supported.** In reference to Hypothesis 2b, a positive relationship between awareness of the environment and the disposal behaviour of donating to charity was predicted. Table 4 shows that, the relationship between awareness of the environment and the disposal behaviour of donating to charity is supported in Scotland (β=

.095, t=2.034, p=.043), but not supported in Australia (β= .094, t= 1.410, p=.160). Thus, **Hypothesis 2b is supported in Scotland but not in Australia, so H2b is partially supported.** Further, there is no significant relationship between awareness of the environment and economic disposal behaviour in any of the two countries (Scotland: β=.007, t=.146, p=.884; Australia: β= .105, t=1.528, p=.128).

Hypothesis 3a predicted a positive relationship between general recycling behaviour and economic textile disposal behaviour. Table 4 shows that, the relationship between general recycling behaviour and economic textile disposal behaviour is supported in Scotland (β= .144, t=2.753, p=.006), but not in Australia. Although the relationship is significant in Australia, contrary to our predictions, this relationship is negative (β= -.150, t=-2.157, p=.032). Thus, **Hypothesis 3a is partially supported.** Concerning Hypothesis 3b, a positive relationship between general recycling behaviour and giving to family and friends was proposed. Table 4 shows that the relationship between general recycling behaviour and giving to family and friends is supported in Scotland (β= .114, t=2.235, p=.026), but not supported in Australia (β= .053, t=.773, p=.440). Thus, **Hypothesis 3b is supported in Scotland, but not in Australia, so H3b is partially supported.** Finally, Hypothesis 3c, predicted a positive relationship between general recycling behaviour and donating to charity. Table 4shows that the relationship between general recycling behaviour and donating to charity is supported in both countries, Scotland (β= .367, t=7.525, p=.000) and Australia (β= .229, t=3.406, p=.001). Thus, **Hypothesis 3c is fully supported in both countries.**

Qualitative Findings

Respondents answered three open-ended questions in the survey: how do they usually dispose of their fashion clothing, why they choose to do it this way, and what would make them give all their clothing to charity shops or ensure they were given to organisations which would re-use or recycle clothing. The findings are summarised in Table 5.

Insert Table 5 here

According to the qualitative data, the most common method of disposing clothing in both countries is by the way of donating to charities (Scotland 34.83%, Australia 44.34%). In addition, almost one quarter of fashion items is given to family members or friends in both countries (Scotland 22.03%, Australia 22.80%). Respondents also disposed of clothing items by reusing them at home for rags or remade into something else (Scotland 15.89%, Australia 14.15%). Other ways respondents dispose of their clothing is through recycling bins (Scotland 9.33%, Australia 8.12%), and kerbside rubbish bins (Scotland 9.26%, Australia 5.40%). Very few respondents reported selling fashion garments via eBay, car boot sales or second hand shops, (Scotland 7.53%, Australia 3.92%).

Donation to charities made the donor feel good and this was the preeminent reason for giving. Other reasons included that respondents liked to think that more unfortunate people might benefit by being able to purchase clothing at lower prices. In Australia, a lot of clothing was donated to charities: *'I dispose of good clothes and not-so-new clothes by donating them to charities or women's shelters.* Respondents were more likely to retain expensive clothing, even if they no longer wore it. There were feelings of guilt associated with disposing of expensive, higher quality items worn only a few times and these tended to be offered first to family and friends or donated to charities. This is illustrated by the following statement: *'If my clothes are still good quality and I don't like them anymore, I give them to family and friends' and 'I offer to family and friends first then take them to charity shops'.* Respondents mentioned that they tend to throw away clothing that is damaged or of 'no use' to other people (e.g. clothing which is especially unfashionable or cheap). Clothing of this description would be relegated to the rubbish bin. A few people sold items on eBay or to second hand shops or stalls: *'I sell my high end label designer and good quality textile pieces on eBay, the other clothing through the markets'.*

When exploring how consumer disposal behaviour could be changed in order to increase the amount of textile donated to charities, respondents from Scotland suggested charities would have to make it more convenient i.e. clothes could be collected from the home or there would need to be a charity shop in the vicinity. Several respondents suggested that they would increase the amount of items taken to the charity shops if there was an incentive. In Australia, many respondents already donate clothing to charities; however, some did not trust the charity organisations and suggested that more information about what the firms do with the donations would lead to increased trust. They also suggested that more advertising, incentives and a pickup service from home would influence donating behaviour.

DISCUSSION OF FINDINGS

The multiple regression analysis shows differences between Scotland and Australia with regards to the antecedents to textile disposal behaviour for female consumers. In Scotland, fashion innovativeness is not related significantly to any specific textile disposal behaviour. Although the Scottish sample has a higher proportion of fashion innovators compared to average consumers, this does not impact on their textile disposal choice. However, in this country, consumer awareness of the environment is positively related to donation to charity, and general recycling behaviour is positively related to all three types of disposal behaviour. Thus, these results suggest that in Scotland, consumers that have a positive attitude towards recycling are more likely to dispose of their clothing in an environmentally friendly manner, such as selling to second hand shops, giving to family or friends or donating to charities.

Moreover, in Australia results show that fashion innovators and consumers that are aware of the environment are more likely to give their clothing away to family and friends, rather than donate to charity or sell it through eBay or second hand shops. Further, consumers that have a positive attitude towards recycling in Australia are more likely to dispose of their clothing by donating to charity organisations. In fact, the most common ways to dispose of

clothing in Australia is through donating to charities or giving to family or friends. In addition, contrary to our predictions, the results show that in Australia, consumers that have a positive attitude towards recycling are negatively predisposed towards selling through eBay or second hand clothing shops to dispose of their fashion textiles. Overall, the responses from the Australian sample are somehow similar to those from the Scottish sample differences are found in that less clothing is reportedly sold for economic benefit, more given to charity and much less put into rubbish bins to end up in landfill sites.

The qualitative findings complement the quantitative results by confirming that the most common method of disposing clothing in both countries is donating to charities followed by giving to family members or friends. Both methods made respondents "feel good" about helping other people in need. Disposal methods such as reuse, recycling bins, kerbside rubbish bins, or selling via eBay, car boot sales or second hand shops, are less common. These results are consistent with reports by charity shop managers in Scotland, which mention an increase of textile donations over the years with growth being in excess of other product donations. They state the reasons for this are a result of increasing consumption of fashion products, faster cycles in trends and styles, response to specific appeals, greater interest in charitable activities and a wider acceptance of charity stores as attractive venues for fashion purchasing (Birtwistle and Moore 2006). Research reveals that textiles from charity shops do not go to waste. Those which are unfit for sale are sent to recycling companies and are either sold on or made into new products such as loft insulation, automobile soundproofing and soft furnishing stuffing (Waste Online 2006).

CONCLUSIONS

Increased textile waste is being created throughout the world owing to the interaction between augmented consumer disposable income and fast-fashion retailers' strategy of launching frequent new lines at low prices. This results in a large amount of textiles being disposed of or

destroyed. The textile disposal stage is often overlooked in consumer and retailing research and our findings have specific implications for consumers and charity organisations.

This study attempted to make an important contribution to the scant literature on consumer disposal of fashion textile. First, this study addressed gaps in the consumer behaviour literature by providing insights into how consumers in two different countries dispose of their used clothing and the underlying factors that affect the choice of different forms of clothing disposal. Second, the findings clearly showed similarities and differences in the clothing disposal behaviour of female consumers across countries.

a) *Selling through eBay or second hand shops*: in Scotland recycling behaviour has a positive impact on selling through eBay, yet in Australia, the situation is the opposite and recycling behaviour has a negative impact on selling through eBay or second hand shops.
b) *Giving away to family and friends*: in Australia, fashion innovators and consumers that are aware of the environment are more likely to give away their clothing to family and friends. However in Scotland, this is not the case and only recycling behaviour has a positive impact on giving away to family and friends.
c) *Donating to charities*: in both countries, general recycling behaviour of consumers positively impacts donating to charities. Furthermore, in Scotland, consumer awareness of the environment also leads to donation to charities.

Overall these results suggest that in Scotland, consumers that have a positive attitude towards recycling are more likely to dispose of their clothing in an environmentally friendly manner, such as selling to second hand shops, giving to family or friends or donating to charities. This is consistent with previous studies conducted in the UK (e.g., Morgan and Birtwistle, 2009). However, the situation is slightly different in Australia which shows that there are differences in clothing disposal behaviour across countries. In Australia, consumers that have a positive attitude towards recycling are more likely to dispose of their clothing by

donating to charity organisations only and not necessarily give away to family and friends or sell through eBay. In addition, contrary to our predictions, the results show that in Australia, consumers that have a positive attitude towards recycling are negatively predisposed towards selling through eBay or second hand clothing shops to dispose of their fashion textiles. This may be explained by a negative perception of Australians regarding the way second hand shops are managed and less likely to use eBay for recycling purposes.

Consistently, qualitative findings suggest that the environmental consequences of production and disposal of fashion textiles were poorly understood concerns among respondents. This deficiency in awareness was thought to be due to lack of media coverage. If the environmental impact of textile manufacturing and disposal was made more widely known, participants predicted that fashion retailers would have to adapt their sales strategies and invest in making textiles of higher quality so they could be re-used. This may provide opportunities for fashion retailers to set up strategic alliances with charities, where donated clothing could provide incentives to repurchase from the named retailer. Many respondents did donate better quality clothing to charities, but thought that lower quality, fast-fashion would not be able to be sold by them. Hence, the respondents put them in the rubbish bin. With a change of behaviour from purchasing low cost, fast-fashion clothing to higher quality garments, there is a greater possibility of clothing being re-used and an increased awareness of the potential for re-use would mean that less would end up in landfill sites. In particular, it was suggested that if home collections, either by charities or the local council, or additional collection points were to be set up, more people would ensure clothing and textiles were not thrown out, but could be re-used or recycled.

An analysis of whether charities and recycling centres are able to process additional donations will have to be explored in the future. Given the issues around sustainable consumption and the findings of this study with regards to consumption of clothing, the next

stage of this research is to interview local council waste managers, representatives of recycling firms and the media to explore ways of reducing the amount of clothing going to landfill sites. This will be followed by interviews with retailers selling clothing to see how they handle returned goods and their thoughts on the viability of implementing an incentive scheme in conjunction with a charity. Furthermore, this study is part of a larger study where data will be collected in different countries, such as Chile, the US and The Netherlands to compare textile disposal behaviour in other industrialized countries as well as emerging countries.

Caution must be used in generalising these results to other countries and population groups elsewhere. A limitation of the sample is that it is targeted at female consumers in two countries. Broad application of the results presented here should be done with caution because of the specific site of countries selected and thus it would be useful to extend this study to a wider population and geographical area to ascertain different groups such as males, and other countries in order to understand the profile of consumer fashion disposal in general.

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Figure 1: Conceptual Model

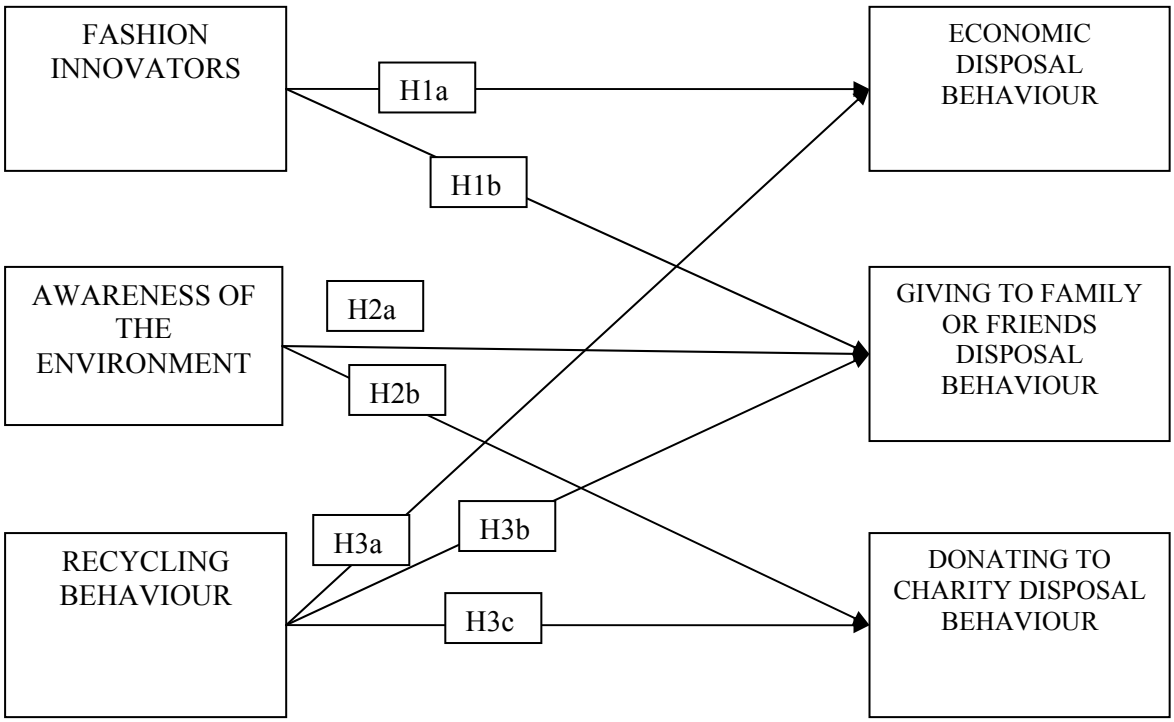

Table 1: Respondent age and status profile

Demographics		**Scotland (n=504)** **%**	**Australia (n=239)** **%**
Age	15-24	63.3	20.5
	25-34	20.9	35.0
	35-44	7.1	21.8
	45-59	7.9	21.8
	60+	.8	0
Marital Status	Single	51.5	23.0
	Single at parents	21.6	11.3
	Single with children	1.2	3.8
	With partner	8.5	19.2
	Married	5.9	11.7
	Married with children	7.9	25.9
	Other	3.4	5.0
Education	School-Standard level	6.4	5.9
	School-Higher level	20.3	7.1
	College, Certificate, or Diploma	10.0	15.9
	University Degree	45.9	38.7
	University Higher Degree	17.4	32.4
Income	< US$10.000	16.3	3.0
	US$10.000 – US$20.000	6.5	2.1
	US$20.000 – US$40.000	15.6	5.5
	US$40.000 – US$60.000	14.4	11.9
	US$60.000 – US$80.000	19.1	14.4
	US$80.000 – US$100.000	9.7	17.8
	> US$100.000	18.7	45.3
Occupation of Main Provider	Higher Managerial or professional	21.0	34.2
	Intermediate managerial or professional	21.7	11.3
	Supervisory, clerical or junior management	13.6	0.8
	Skilled Manual Worker	9.2	4.6
	Unskilled manual laborer	2.5	2.5
	Housewife	1.5	34.4
	Student	19.4	5
	Unemployed	1.5	.4
	Retired	2.3	0
	Self-Employed	7.3	6.8

Table 2: Items, Reliabilities, Means and St. Deviation

Constructs	Indicators	Scotland		Australia	
		Mean	Sd. Deviation	Mean	Sd. Deviation
Fashion Innovation Scotland α =.691 Australia α =.769	In general I am among the last in my circle of friend to buy a new fashion item when it appears	3.49	1.08	3.00	1.31
	If I heard that a new fashion trend was available in the store, I would be interested enough to buy it.	3.26	.99	2.74	1.12
	Compared to my friends I own few fashion trend items	3.32	1.10	2.88	1.30
	I will buy a new fashion trend item even if I have not heard of it yet.	2.84	1.18	2.26	1.26
	In general, I am the last of my circle of friends to know the names of the latest fashion trends	3.58	1.15	3.31	1.31
	I know the names of new fashion designers before other people do.	2.78	1.07	2.30	1.24
Consumer Awareness of the Environment Scotland α =.640 Australia α =.683	In the next 5-10 years we are in serious danger of destroying the environment	3.98	1.02	4.21	1.01
	Not recycling poses a threat to the environment	4.08	.977	4.46	.787
	It is time for environmental groups to get more radical	3.40	1.03	3.26	1.15
	I am extremely worried about the state of the environment	3.33	.977	3.87	.928
	I feel personally helpless to have much impact on the environment	3.13	.997	3.02	1.15
	I don't feel I have enough knowledge to make a well informed decision on environment issues	3.11	1.01	2.89	1.19
	Recycling will not be enough to save the environment	3.46	1.12	4.04	.870
General Recycling Behaviour Scotland α =.915 Australia α =.927	I recycle plastic	3.05	1.45	4.26	.905
	I recycle glass	3.03	1.45	4.29	.976
	I recycle paper	3.43	1.41	4.28	.947
	Compared with the people I know, I make a greater effort to recycle	2.95	1.23	3.62	1.03
	I make an effort to find and use recycling bins	2.92	1.31	3.91	1.00
Economic Textile Disposal Scotland α =.676 Australia α =.657	I sell my clothing to second hand shops	1.64	1.02	1.51	.883
	I sell my clothing on eBay or equivalent	1.45	.910	1.29	.657
	I sell my clothes at car boo/garage sales	1.29	.701	1.23	.627
	I purchase clothing from second hand shops	1.78	1.12	2.15	1.12
	I purchase clothing from eBay or equivalent	1.71	1.07	1.62	.945
Give Away Scotland α =.741 Australia α =.776	I give used clothing to members of my family	2.98	1.21	3.22	1.19
	I give used clothing to friends	2.47	1.21	2.92	1.18
	I swap clothing with friends and family members	2.51	1.36	2.38	1.24
Donate to Charity Scotland α =.687 Australia α =.726	I give clothing to charity shops	3.42	1.33	3.94	1.09
	It makes me feel good to give clothing to charity shops	3.46	1.22	3.79	1.06
	I only give quality clothing to charity shops	2.28	1.11	2.65	1.01

Table 3a: Means, Standard Deviations and Correlations Scotland

	Mean	Std. Deviation	INN	GRB	CAE	ECD	FCD	DCD
INN	3.21	1.10	1.00	-.169**	-.006	.060	.083	-.100*
GRB	3.50	1.02	-.169**	1.00	.261**	.091*	.069	.417**
CAE	3.08	1.37	-.006	.261**	1.00	.058	.120**	.197**
ECD	1.57	.096	.060	.091*	.058	1.00	.315**	.114*
FCD	2.65	1.26	.083	.069	.120**	.315**	1.00	.213**
DCD	3.05	1.22	-.100*	.417**	.197**	.114*	.213**	1.00

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level.

Table 3b: Means, Standard Deviations and Correlations Australia

	Mean	Std. Deviation	INN	GRB	CAE	ECD	FCD	DCD
INN	2.75	1.25	1.00	-.161*	-.037	.227**	.152*	-.089
GRB	3.68	1.02	-.161*	1.00	.255**	-.179**	.049	.329**
CAE	4.07	.97	-.037	.255**	1.00	.115	.248**	.134*
ECD	1.56	.85	.227**	-.179**	.115	1.00	.358**	-.040
FCD	2.84	1.2	.152*	.049	.248**	.358**	1.00	.109
DCD	3.46	1.05	-.089	.329**	.134*	-.040	.109	1.00

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level.

Legend: INN=Fashion Innovators, GRB=General Recycling Behaviour, CAE= Consumer Awareness of the Environment, ECD=Economic Clothing Disposal, FCD= Family Clothing Disposal, DCD=Donation Clothing Disposal

Table 4: Regression Analysis

			Scotland			Australia			Hypotheses
Independent		**Dependent Variable**	**β**	**t**	**Sig**	**β**	**t**	**Sig**	**Results**
Fashion innovativeness	**H1a**	Economic Behaviour	.010	.177	.860	.142	1.691	.092	Not supported
	H1b	Give to Family/Friend	. 027	.470	.638	.236	2.845	**.005***	Partially supported
		Donate to Charity	-.092	-1.674	.095	-.028	-.340	.734	---
Awareness of the environment		Economic Behaviour	.007	.146	.884	.105	1.528	.128	---
	H2a	Give to Family/Friend	.048	.986	.324	.203	3.002	**.003***	Partially supported
	H2b	Donate to Charity	.095	2.034	**.043***	.094	1.410	.160	Partially supported
Recycling behaviour	**H3a**	Economic Behaviour	.144	2.753	**.006***	-.150	-2.157	**.032***	Partially supported
	H3b	Give to Family/Friend	.114	2.235	**.026***	.053	.773	.440	Partially supported
	H3c	Donate to Charity	.367	7.575	**.000***	.229	3.406	**.001***	Fully Supported

Table 5: Textile Disposal Methods in Percentages

	Sell	Re-use at home	Family & friends	Charity	Recycling bins	Kerbside rubbish bins
Scotland	7.53	15.89	22.03	34.83	9.33	9.26
Australia	3.92	14.15	22.80	44.34	8.12	5.40

Note: Data does not sum to 100 due to response variances